

# **Massachusetts Community and State College Recycling: Springfield Technical Community College**

## **FINAL REPORT**

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### *Submitted to:*

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## **Springfield Technical Community College (Table 7)**

Springfield Technical Community College is large enough that we recommend separate collection of mixed paper and cardboard, each in a self-contained compactor (taking advantage of STCC's proximity to markets). With the purchase of two compactors, and accounting for avoided disposal costs, we project total savings of over \$23,000 per year and the capture of approximately 200 tons of fibers. We also recommend the purchase of about \$5,000 in recycling supplies (two-wheeled containers and "slim jim" containers) to fully implement these recommendations.

STCC does not recycle beverage containers. We recommend that STCC should take advantage of its proximity to the Springfield MRF and haul containers directly to the MRF in two-wheeled "toters", using available labor and vehicles.

With these enhancements, we estimate that STCC should be able nearly to triple its recycling rate, from its current 10-12% to about 30%.

## Springfield Technical Community College

### Recycling Status, Issues, and Opportunities Springfield Technical Community College

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#### Current Status

Springfield Technical Community College (STCC) can improve its recycling efforts in several areas, most or all of which should reduce costs while significantly improving capture rates. Mixed paper and cardboard are programs clearly in need of enhancement. The school has the infrastructure needed to collect beverage containers (staff and vehicles), but may need assistance with the purchase of recycling containers. In 2001-2002 STCC managed an exemplary program that recovered tons of surplus property, metal and wood wastes, and electronic equipment in the cleanout of an old building – and saved tens of thousands of dollars in disposal costs. But the school has not followed up on this initiative, and current recycling efforts for wood, metal, and electronics are weak.

In summary, the school has all of the elements in place to establish (or in some cases re-establish) comprehensive, cost effective programs for a broad range of recyclable commodities. And the school benefits from proximity to good markets and/or processing facility for all major recyclables. What is needed most is reinvested management attention to take advantage of these opportunities.

#### Issues / Opportunities

For most if not all commodities, STCC's path to reach a satisfactory recycling outcome is straightforward. Prioritizing programs and securing resources for capital equipment and supplies will be STCC's most important first steps.

- **Mixed Paper:** STCC's program has a broad specification that accepts almost "anything that tears" – office and computer paper, colored paper, mail and envelopes, newspaper, and magazines. The school is being overcharged for the recycling service it receives from its outside service provider, however. And internally, much additional fiber still remains to be recovered. Additional collection containers and better visibility, particularly in classrooms and student common areas, are the most obvious means to enhance collection volumes. Securing a compactor to process and market paper in larger volumes is recommended to realize cost efficiencies and better leverage in marketing the collected product.
- **Cardboard:** STCC has a relatively effective cardboard recycling program, but a large proportion of OCC is still being discarded. Additional education for both generating departments and facilities staff is needed to assure that cardboard is picked up for recycling. Acquiring a compactor (instead of dumpsters used for loose collection) will simultaneously assure that the school can recycle its frequent surges in cardboard generation, reduce collection/transportation costs, and allow the school to realize revenue from the cardboard it collects.

- ***Beverage Containers.*** Absence of a container recycling program puts STCC in violation of Massachusetts' disposal bans, and detracts significantly from the school's perceived commitment to recycling in the eyes of students and staff. The school should take advantage of its proximity to the Springfield Material Recovery Facility (MRF) to implement mixed container collection, using bag-lined recycling bins, and taking containers directly to the Springfield MRF as they are collected, without intermediate consolidation.
- ***Scrap Metal:*** The school occasionally recognizes a metal recycling opportunity and calls in a dedicated container. But more often metal is simply deposited into the waste stream. Dedication of a container to metal recycling is a simple step to capture this waste stream, and appears to be warranted based on STCC's generation of scrap metal.
- ***Wood Waste:*** Like metal, wood is typically discarded as waste, although generation, and the availability of adequate space on campus, appears to merit dedication of a container.
- ***Computers/Electronic Equipment:*** After STCC's major initiative to recycle wood waste from the 2001-2002 cleanout of its "Building 19", subsequent efforts to capture used electronics appear to have slumped. Renewed initiative to assure that electronics are handled appropriately can regain the momentum, as well as the environmental and economic benefits, that STCC enjoyed with the Building 19 cleanout.
- ***Surplus Property:*** STCC uses the state surplus system, but discards as trash nearly all of the items that are not picked up through the state program. Minimal effort would be required to triage and recycle much of this residual surplus (by donation or resale), and the balance should be recycled as part of STCC's metal or wood stream.

### **Impacts on Waste Disposal**

With incomplete information on waste disposal tonnage, we estimate that STCC recycles approximately 15% of its waste stream.

We believe that another 10% or more can be added to this rate by more aggressive attempts to recover cardboard and mixed paper, addition of the beverage program, and recovery of scrap wood and metal. At least as important, we believe that STCC can realize meaningful financial benefits by moving to self processing of its mixed paper and cardboard; completion of analysis to document this fact is perhaps the most important first step the school can take toward enhancing its recycling programs.

**Springfield Technical Community College**  
**Massachusetts Community/State College Recycling: Current Practices and Potential Modifications**

Institution: Springfield Technical Community College  
Contact: Betty Ann Learned

Phone: 413-755-4889

Date:  
Email:

<b>Material</b>	<b>Current Practice</b>	<b>Recommended Modifications</b>	<b>Comments/Notes</b>
Mixed Office Paper	Collected by maintenance in wheeled carts. Carts are brought out to curb for BFI to empty. Once per week.	Paper compactor needed. Increase recovery volume through education and more collection locations.	They are being overcharged for service, and the service they use is one of the more expensive options. Facilities could bring paper to a compactor with totter dumper. Need more collection containers. Need to go after classrooms and student common areas.
Confidential Documents	Some shredded internally and sent out with mixed paper. Some external services hired, but no one has real data.	Make all shredding internal for now.	Need to get a better handle on who oversees the programs.
Newspaper/Magazine Mix	See office mix	See office mix	Not getting much of this fiber grade
Cardboard	Collected by maintenance and facilities staff, then hauled by facilities in service truck to 2 eight yard dumpsters.	OCC compactor needed. Education needed. Cardboard pick up schedule needs to be more consistent. Facilities has good base, needs support.	Trash dumpsters filled with OCC!! Collection system not working well because facilities not aware of the need for special pick ups. The dumpsters are not large enough to cover volume surges.
Other	None		
Beverage Containers	None	Direct haul in toters to Springfield MRF.	They have the space to start a program, and they have the collection infrastructure (staff and vehicles).
Tin Cans	None	See above	See above
Scrap Metal	Not really. IRN helped them out in 2002.		Sometimes they will identify a metal recycling opportunity and call in a special roll off, but most of the time metal is put into the waste stream.
Wood Waste	None	Start a wood pallet and scrap wood program—they have the space.	No one is watching over this commodity.

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Material	Current Practice	Recommended Modifications	Comments/Notes
Computers/Electronic Equipment	Yes, but only in 2001 & 2002.	Get them back to collecting electronics. Set them up with gaylord containers.	The flow just stopped. While building 19 was considered the prime storage area, that space is closed. Where are things going?
Fluorescent Lamps & Ballasts	Yes, but still waiting on data from STCC	Unclear	Same comments as above.
Batteries	See above		
Surplus Property	Building 19 clean out relieved the school of most of their property storage.	Organize a program to recover surplus property before it gets thrown out.	This school generates significant surplus. Most is thrown out into dumpsters after coming off of the surplus list.
Construction/Demolition	None	Need policy and guidance	There will be major projects going on over the years, and they would like the tools to encourage recycling.

**Springfield Technical Community College**  
**Cost of Recommended Recycling Program Enhancements**

**Fibers**

**Recommendation, Mixed Paper:** Mixed paper collected in toters; Toters to compactor; Compactor to local market (North Star)

<b>Estimated Cost of Mixed Paper Recycling Program, STCC</b>		
<b>Item</b>	<b>Units</b>	<b>Value</b>
Estimated Fiber Generation, MP	Tons/Yr	120
Current Recovery, MP	Tons/Yr	45
Additional MP Available for Recovery	Tons/Yr	75
Estimated Capture at 80% Recycling Rate	Tons/Yr	96
Cost of Current Fiber Recycling Program	\$\$/Yr	\$4,356
Self-Contained Compactor (installed, with toter dumper)		
Purchase	\$\$	\$17,590
4-Year Lease-to-Own	\$\$/Yr	\$5,455
Cost Per Pickup (Round Trip to Market)	\$\$/Pickup	\$150
Tons Per Pickup, MP	Tons/Pickup	6.2
Total Pickups Per Year	Hauls/Yr	15.5
Total Annual Cost of Pickups	\$\$/Yr	\$2,323
Revenue, Mixed Paper	\$\$/Ton	\$25
Total Annual Revenues, Mixed Paper	\$\$/Yr	\$2,400
<b>Avoided Disposal Cost (Haul + Tip)</b>	<b>\$\$/Ton</b>	<b>\$125</b>
<b>Avoided Disposal Cost, Total</b>	<b>\$\$/Yr</b>	<b>\$12,000</b>
<b>Avoided Disposal Cost, Additional MP Recycling Tonnage</b>	<b>\$\$/Yr</b>	<b>\$6,375</b>
Annual Recycling Cost(Revenue) with Compactor Purchase	\$\$/Year	(\$77)
Annual Recycling Cost(Revenue) with 4-Year Lease-to-Own	\$\$/Year	\$5,378
<b>Net Annual Cost(Savings) after Avoided Disposal Cost and Elimination of Cost of Current Program, with Compactor Purchase</b>	<b>\$\$/Year</b>	<b>(\$10,808)</b>
<b>Net Annual Cost(Savings) after Avoided Disposal Cost and Elimination of Cost of Current Program, with Compactor, 4-Yr LTO</b>	<b>\$\$/Year</b>	<b>(\$5,353)</b>

**Recommendation, Cardboard:** Cardboard to self-contained compactor. Full compactor delivered to market and returned.

Estimated Cost of Cardboard Recycling Program, STCC		
Item	Units	Value
Estimated Cardboard Generation	Tons/Yr	80
Current Cardboard Recovery	Tons/Yr	30
Additional Cardboard Available for Recovery	Tons/Yr	50
Total Capture of OCC at 80% Recycling Rate	Tons/Yr	64
Cost of Current Cardboard Recycling Program	\$/Yr	\$2,100
Self-Contained Compactor (installed, with toter dumper)		
Purchase	\$	\$17,590
4-Year Lease-to-Own	\$/Yr	\$5,455
Cost Per Pickup (Round Trip to Market)	\$/Pickup	\$150
Tons Per Pickup, OCC	Tons/Pickup	5.0
Total Pickups Per Year	Hauls/Yr	16.0
Total Annual Cost of Pickups	\$/Yr	\$2,400
Revenue, Cardboard	\$/Ton	\$40
Total Annual Revenues, Cardboard	\$/Yr	\$2,560
<b>Avoided Disposal Cost (Haul + Tip)</b>	<b>\$/Ton</b>	<b>\$125</b>
<b>Avoided Disposal Cost, Total</b>	<b>\$/Yr</b>	<b>\$8,000</b>
<b>Avoided Disposal Cost, Additional MP Recycling Tonnage</b>	<b>\$/Yr</b>	<b>\$4,250</b>
Annual Recycling Cost(Revenue) with Compactor Purchase	\$/Year	(\$160)
Annual Recycling Cost(Revenue) with 4-Year Lease-to-Own	\$/Year	\$5,295
Net Annual Cost(Savings) after Avoided Disposal Cost and Elimination of Cost of Current Program, with Compactor Purchase	\$/Year	(\$6,510)
Net Annual Cost(Savings) after Avoided Disposal Cost and Elimination of Cost of Current Program, with Compactor, 4-Yr LTO	\$/Year	(\$1,055)

## Beverage Containers

**Recommendation:** Collect in 95-gallon wheeled containers (with poly liners). Transport directly to Springfield MRF (using available STCC labor and vehicle) without intermediate consolidation.

Estimated Cost of Beverage Container Recycling Program, STCC		
Item	Units	Value
Estimated Container Generation	Tons/Yr	40
Estimate Current Recycling Tonnage	Tons/Yr	0
Recycling Rate with Aggressive Program	Percent	75%
Estimated Recovery with Aggressive Program	Tons/Yr	30
Haul to MRF (Use Existing Labor and Vehicle)	\$\$/Haul	\$0
Tons per Haul to MRF	Tons/Haul	0.75
Annual Hauls to MRF	Hauls/Yr	40.0
Total Hauling Cost	\$\$/Yr	\$0
Per Ton Processing Charge	\$\$/Ton	\$70
Avoided Disposal Cost (Haul + Tip)	\$\$/Ton	\$125
Avoided Disposal Cost, Total with Aggressive Program	\$\$/Yr	\$3,750
<b>Annual Cost</b>	<b>\$/Year</b>	<b>\$2,100</b>
<b>Annual Cost(Savings) after Avoided Disposal</b>	<b>\$/Year</b>	<b>(\$1,650)</b>

**Recommendation:** Purchase additional recycling containers

Item	Number	Unit Cost	Total Cost
95-gallon wheeled recycling containers with beverage container tops (Schaefer or equivalent)	24	\$100	\$2,400
"Slim Jim" recycling containers or equivalent (slot tops)	50	\$50	\$2,500
<b>Total</b>			<b>\$4,900</b>